

Application No.: 10/800,230

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Docket No.: TOW-067RCE

**AMENDMENTS TO THE CLAIMS**

1. (currently amended) A fuel gas production apparatus for reforming a hydrogen-containing fuel to produce a hydrogen-rich fuel gas, comprising:

a reforming mechanism including an auto-thermal reforming (ATR) system for reforming ~~the said~~ hydrogen-containing fuel to obtain a reformed gas, said reforming mechanism including an evaporator for changing water into steam before said steam mixes with said hydrogen-containing fuel or an oxygen supply;

a PSA mechanism for removing impurities from said reformed gas to refine said reformed gas into said fuel gas, said PSA mechanism including an off-gas tank; and

a cooling mechanism provided between said reforming mechanism and said PSA mechanism,

wherein said off-gas tank is coupled to said evaporator,

wherein said reforming mechanism uses said hydrogen-[[ ]]containing fuel, said steam and said oxygen supply to induce oxidation reaction and reforming reaction simultaneously, and

wherein said oxygen supply ~~is supplied to said reforming mechanism~~ is provided separately from said water.

2. (canceled)

3. (original) A fuel gas production apparatus according to claim 1, wherein said hydrogen-containing fuel is methane.

4. (currently amended) A fuel cell system comprising:

a fuel gas production apparatus for reforming a hydrogen-containing fuel to produce a hydrogen rich fuel gas; and

a fuel cell using said fuel gas supplied from said fuel gas production apparatus,

wherein said fuel gas production apparatus comprises:

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a reforming mechanism including an auto-thermal reforming (ATR) system for reforming ~~the said~~ hydrogen-containing fuel to obtain a reformed gas, said reforming mechanism including an evaporator for changing water into steam before said steam mixes with said hydrogen-containing fuel or an oxygen supply;

a PSA mechanism for removing impurities from said reformed gas to refine said reformed gas into said fuel gas, said PSA mechanism including an off-gas tank; and

a cooling mechanism provided between said reforming mechanism and said PSA mechanism;

wherein said off-gas tank is coupled to said evaporator,

wherein said reforming mechanism uses said hydrogen-~~[[ ]]~~containing fuel, said steam, and said oxygen supply to induce oxidation reaction and reforming reaction simultaneously, and

wherein said oxygen ~~supply is supplied~~ to said reforming mechanism is provided separately from said water.

5. (canceled)

6. (original) A fuel cell system according to claim 4, wherein said hydrogen-containing gas is methane.

7. (original) A fuel cell system according to claim 4, further comprising an air blower for supplying air to said fuel cell.